Exhibit C

Final '837 Certificate of Correction

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.   : 11,549,837 B2
APPLICATION NO. : 16/356870
DATED   : January 10, 2023
INVENTOR(S)   : Michael Klicpera

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Specification

Replace Column 1, Lines 26-39 as follows:
Water is increasingly becoming a precious resource. While freshwater supplies have been challenged due to climate (short rainy seasons and long droughts) and increased pollution, water demand has been rising due to the growing population along with increased development. The increasingly limited supply of fresh water is a humanitarian concern and water conservation is becoming a major issue for many communities. An apparatus for real-time monitoring of water use and real-time detection of leak conditions at private and/or public property(ies) (e.g., residential structures and yards, business/industrial/commercial facilities, and utilities/governmental/institutional sites) can be useful in assessing and controlling water resources and supporting water conservation.
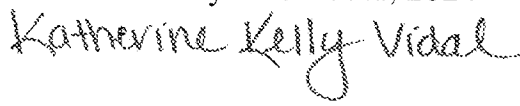
Replace Column 7, Lines 13-18 as follows:
In the water meter environment, non-repudiation refers to the technology that confirms or ensures and prevents a sender or receiver from denying that a message(s), control/command signal(s), data, and/or information was sent or received. Blockchain technology is an upcoming technology that will ensure non-repudiation compliance.

Replace Column 23, Lines 20-46 as follows:
In the water meter environment, non-repudiation refers to the technology that confirms or ensures and prevents a sender or receiver from denying that a message(s), control/command signal(s), data, and/or information was sent or received. Blockchain technology is an upcoming technology that will ensure non-repudiation compliance.

Replace Column 25, Lines 28-58 as follows:
Several current security techniques that utilize public key cryptography are the Public Key Infrastructure (PKI), the Public Key Encryption (PKE) and the Digital Signature protocols. PKI enables digital certificates to be used to electronically identify an individual or an organization. A PKI requires a certificate authority (CA) that issues and verifies digital certificates and can utilize a registration authority (RA) that acts as the verifier of the CA when a new digital certificate is issued.

Signed and Sealed this
Fifteenth Day of October, 2024

Katherine Kelly Vidal

Katherine Kelly Vidal
Director of the United States Patent and Trademark Office

PKE is a message or command signal that is encrypted with a recipient's public key. The message cannot be decrypted by any individual or machine that does not possess the matching private key. PKE is a security protocol that is used to maintain confidentiality. Similarly, Digital signatures are also utilized with key pair technology, in association with authentication, integrity and non-repudiation confidentiality techniques. In practice, when a user transmits a message or signal or data with a digital signature, the message or signal includes a one-way hash prior to transmission, and the recipient uses the sender's public key to decrypt the hash and verify the digital signature. PKI, PKE, and digital signers are currently being supplemented with two factor authentication that utilizes a confirmation protocol after password input with a follow up email, phone call, or utilizing a authenticator number scheme. Furthermore, the PKI, PKE and digital signature techniques might become archaic when blockchain technology becomes more generally adopted.

Replace Column 26, Lines 23-40 as follows:
Encryption, authentication, integrity and non-repudiation or blockchain may be important characteristics when the water meter and leak detection system 10 (126 shown in FIGS. 6 and 200 shown in FIG. 7) is transferring water use or water quality data or information to a remote server/database via a public or private network that provide wireless subsequent access to registered computers and cell, smart and mobile phones 400. When the water meter and leak detection system 10 (126 shown in FIGS. 6 and 200 shown in FIG. 7) receives or uploads data and information such as a control command signal to send or transmit data and information it is critical that the device can authenticate the sender and be sure of the integrity of the data and information. Encryption provides privacy by converting the data or information into an "encrypted" code to prevent unauthorized access. Encryption can be provided point-to-point, or end-to-end, and transmit messages using encryption schemes such as Pretty Good Privacy (PGP), Secure/Multipurpose Internet Email (S/MIME), XML, or SSL encryption protocols. Non-repudiation prevents the sender from denying that they sent or received data/information or a message. Non-repudiation can be provided by signing, electronic witnessing and technologies that assert a document was read before it was signed. One of the main advantages of the blockchain technology is that non-repudiation is nearly immutable. Here, the water meter and leak detection system 10 (126 shown in FIGS. 6 and 200 shown in FIG. 7) can include digital signature technology, data packets or messages using PGP, S/MIE, XML and Digital Signature, TLS/SSL and two-step authentication to provide for non-repudiation of those messages, information or data.

Replace Column 44, Lines 46-58 as follows:
FIG. 11 shows an example of an application or page (APP) 300 for Water Use 302 having a daily 304 graph 306 with day hours 308, designated by the symbol AM 312 and the night hours 310 designated by the symbol PM 314. At the right side of the example application or page (APP) 300 is the daily total use of water 316 and the daily total cost in dollars (or other currency) 318 the weekly total use of water 326 and the weekly total cost in dollars 328, and the monthly total use of water 336 and the monthly total cost in dollars 338 by year 334 per regional water rates that has been downloaded the data 340 from the registered or serving water municipality. Within the daily graph 306 is a plotted Line 307 that shows the hourly water use. The plotted Line 307 can have a rolling feature whereby new data replaces the oldest data in the graph. A gallon or liter scale can be included on the left side of the daily graph 305 (not shown).

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In the Claims

Replace Column 60, Line 1-Column 62, Lines 1-46 as follows:

42. A water meter and leak detection system comprising:

a base station having a water control valve mechanism interposed between a main water source and a water supply line for a building or a structure;

the base station further comprising:

a) an electrical circuitry including at least one of a CPU, a microprocessor, or a microcontroller, or any combination thereof;

b) one or more flow rate sensors connected to the water supply line and designed to monitor at least one of a water use data, a water energy use data, a water quality data, or a leak detection information, or any combination thereof, from the building or the structure, the one or more flow rate sensors connected with the electrical circuitry;

c) a power source that is at least one of an AC powered, a DC powered, or a one or more standard or rechargeable batteries, or any combination thereof, the rechargeable batteries capable of being supplemented with a turbine or other rotational mechanism that generates electrical energy, the power source is electrically connected to the electrical circuitry;

d) one or more wireless communication technologies comprising at least one of a LoRa, a Sigfox, an Ultra Narrow Band (UNB), a 6LoWPAN, a WiMAX, a NB-IoT, a 3GPP cellular, a 4G/LTE-M cellular, or a 5G cellular technology, or any combination thereof;

e) wherein the one or more wireless communication technologies utilizes authentication and encryption technologies for pairing operations and to prevent unauthorized access to a water data or information; and

f) wherein the one or more wireless communication technologies comprising at least one of the LoRa, the Sigfox, the Ultra Narrow Band (UNB), the 6LoWPAN, the WiMAX, the NB-IoT, the 3GPP cellular, the 4G/LTE-M cellular, or the 5G cellular technology, or any combination thereof, consists of a duplex technology to transmit the water use data, the water energy use data, the water quality data, or the leak detection information, or any combination thereof, and send commands to regulate the water control valve mechanism;

the CPU, the microprocessor, or the microcontroller, or any combination thereof, includes at least one of a programming setting managed by a user to remotely set a mode setting or modify a default setting processed by a manufacturer to:

a) record a water flow event to an integrated memory bank or a removable memory device for analysis;

b) combine a plurality of water flow events into the integrated memory bank and subsequently schedule the transfer of the water flow events to a one or more remote computers or servers or to a cloud computing company;

c) transfer the water flow event to the one or more remote computers or servers or to the cloud computing company;

d) transfer the water data or information utilizing a blockchain technology to the one or more remote computers or servers or to the cloud computing company;

e) modify water units or timing units;

f) establish alarm set points;

or any combination thereof; and

the one or more wireless communication technologies configured to:

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(i) transmit at least one of the water use data, the water energy use data, the water quality data, or the leak detection information, or any combination thereof, to the one or more remote computers or servers or to the cloud computing company; and

(ii) receive an instruction or signal to command the management of the water control valve mechanism or perform another command operation;

using at least one of an Internet connection, a private network system, or a corporate owned network system that communicates with a smart phone, a computer, a server, a tablet, a web portal, or another electronic communication device.

43. A water meter and leak detection system as recited in claim 42, further comprising a temperature sensor in close proximity to the water supply line, the temperature sensor communicates with the water meter and leak detection system and initiates a water freezing protection procedure when the water supply line approaches a water freezing point of 32 degrees Fahrenheit or 0 degrees Celsius, the freezing protection procedure includes at least one of incorporating a freeze plug mechanism, draining water distribution lines with a three-way valve, or replacing water in the water supply line with an air, a nitrogen, or another gas or a liquid with low freezing point.

44. A water meter and leak detection system as recited in claim 42, further comprising at least one of a pressure sensor or an acoustic sensor configurable to quantify a leak condition when the water meter and leak detection system closes the water control valve mechanism by monitoring pressure changes and capable of transferring monitored pressure or acoustic information to the base station for making a one or more software calculations to determine a leak type or a leak category.

45. A water meter and leak detection system as recited in claim 42, further comprising one or more communication hubs in wired communication with the base station or having a wireless communication technology corresponding with the one or more wireless communication technologies of the base station, wherein the one or more communication hubs transfers the water use data, the water energy use data, the water quality data, or the leak detection information, or any combination thereof, to at least one of the Internet connection, the private network system, or the corporate owned network system that communicates with company the one or more remote computers or servers or with the cloud computing company.

46. A water meter and leak detection system as recited in claim 42, further comprising a second wireless communication technology utilizing at least of one of a Bluetooth, a Bluetooth low energy, or a Wi-Fi wireless technology for performing an authentication pairing procedure to initially establish remote wireless communications by inputting a network username and a password, scanning a QR code, or performing a two-step authentication scheme, or any combination thereof.

47. A water meter and leak detection system as recited in claim 42, wherein an owner or the user communicates with at least one of the smart phone, the computer, the server, the tablet, the web portal, or the other electronic communication device that includes a software program displaying an icon, a menu, or a submenu that provides at least one function of:

(a) providing a graphical display of at least one of the water use data, the water energy use data, or the water quality data, or any combination thereof, from a selected water fixture or a water appliance, the water data or information transferred from at least one of the base station, a remote central computer, or the cloud computing company;

(b) displaying an alarm condition based on one of the water use data, the water energy use data, or the water quality data, or any combination thereof, and programmed into the base station;

(c) turning on or off a water supply by sending a command signal to the base station;

(d) showing or modifying the software program, a setting, or a default menu included within the base station;

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(e) identifying an operational position of the water control valve mechanism by sending a request to the base station;

(f) downloading updates or regional water rates into the base station; or

(g) programming a vacation or work water schedule into the base station.

48. A water meter and leak detection system as recited in claim 45, wherein the base station includes at least one of a mesh or a peer-to-peer technology circuitry that communicates with a one or more base stations or the one or more communication hubs.

49. A water meter and leak detection system as recited in claim 45, wherein the one or more communication hubs includes at least one of a mesh or a peer-to-peer technology circuitry that communicates with a one or more base stations.

50. A water meter and leak detection system as recited in claim 42, further comprising a one or more wired communication technology comprising at least one of a an X10, an UPB, or a HART technology.

51. A water meter and leak detection system as recited in claim 42, wherein the one or more wireless communication technologies transfers to the Internet, the water use data, the water energy use data, the water quality data, or the leak detection information, or any combination thereof, and transmits a control signal utilizing the blockchain technology.